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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/931,510	08/16/2001	E. Bayne Carew	64,131-003	3847
7590 10/22/2003				
DAVID M. LAPRAIRIE, ESQ. HOWARD & HOWARD The Pinchurst Office Center 39400 Woodward Avenue, Suite 101 Bloomfield Hills, MI 48304-5151			EXAMINER SAVAGE, MATTHEW O	
			ART UNIT 1723	PAPER NUMBER

DATE MAILED: 10/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	09/931,510		CAREW, E. BAYNE	
	<b>Examiner</b>		<b>Art Unit</b>	
	Matthew O Savage		1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 July 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-65 and 76-84 is/are pending in the application.
- 4a) Of the above claim(s) 29,32,33,37-41,47-56,63 and 78-82 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17-24 is/are allowed.
- 6) ☒ Claim(s) 1-16,25-28,30,31,34-36,42-46,57-62,64,65,76,77,83 and 84 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                   | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                          | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>12</u> . | 6) <input type="checkbox"/> Other: _____                                    |

New claims 78-82 have been withdrawn as being directed to a non-elected species.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 25-28, 30, 31, 57, 60-62, 64, 65, 83, and 84 are rejected under 35 U.S.C. 102(b) as being anticipated by Krapukhin.

With respect to claim 1, Krapukhin discloses a plurality of wave coils 6 (see FIGS. 1-2 arranged axially to define a filter element having first and second ends and an inner cavity, a support 4 or 5 engaging one of the first and second ends for supporting the wave coils and for delivering fluid inside or outside an inner cavity, each of the wave coils including at least one crest and at least one trough with the crest of one wave coil engaging the trough of an adjacent coil to define a filtration aperture between each crest and trough of adjacent wave coils for filtering fluid diverted by the support (see FIG. 2).

Concerning claim 25, Krapukhin discloses a retention post (see FIG. 1) extending through the inner cavity between the first and second ends of the filter element capable of maintaining axial alignment of the coils (e.g., via the end members 4, 5).

Regarding claim 26, Krapukhin discloses a wave spring 6.

As to claim 27, Krapukhin discloses wave coils having a surface capable of functioning as a shearing surface.

As to claim 28, Krapukhin discloses coils including a plurality of ridges defined by the crests of the wave coils (see FIG. 1).

Concerning claim 30, Krapukhin discloses the wave coils as extending continuously in an endless path through at least one crest and trough between the first and second ends.

Regarding claim 31, Krapukhin discloses wave coils extending continuously in a helix through the endless path between the first and second ends.

With respect to claim 57, Krapukhin discloses a plurality of wave coils 6 arranged axially and having first and second ends and an inner cavity, the wave coils including at least one crest and trough with the crest engaging the trough of an adjacent coil to define a filtration aperture between each crest and trough of adjacent coils for filtering fluid (see FIGS. 1-2).

As to claim 60, Krapukhin discloses wave coils defined as a wave spring 6.

Concerning claim 61, Krapukhin discloses each of the wave coils as including a surface capable of acting as a shearing surface.

As to claim 62, Krapukhin discloses coils including a plurality of ridges defined by the crests of the wave coils (see FIG. 1).

Concerning claim 64, Krapukhin discloses the wave coils as extending continuously in an endless path through at least one crest and trough between the first and second ends.

Regarding claim 65, Krapukhin discloses wave coils extending continuously in a helix through the endless path between the first and second ends.

With respect to claim 83, Krapukhin discloses a plurality of wave coils 6 (see FIGS. 1-2 arranged axially to define a filter element having first and second ends and an inner cavity, a support 4 or 5 engaging one of the first and second ends for supporting the wave coils and for delivering fluid inside or outside an inner cavity, each of the wave coils including at least one crest and at least one trough with the crest of one wave coil engaging the trough of an adjacent coil to define a filtration aperture between each crest and trough of adjacent wave coils for filtering fluid diverted by the support (see FIG. 2), the wave coils as extending continuously in an endless path through at least one crest and trough between the first and second ends.

Concerning claim 84, Krapukhin discloses wave coils that extend continuously in a helix through an endless path between the first and second ends.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-6, 9-15, 34-36, 58, and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krapukhin in view of Kannan.

With respect to claims 2 and 58, Krapukhin discloses a mechanism 3-5 engaging the first and second ends for modifying a length L extending through the first and second ends of the filter element, but, as best understood, fails to specify the adjustment mechanism as being capable of reducing or expanding the filtration aperture. Kannan discloses an analogous apparatus including an adjustment mechanism 15-19 capable of reducing or expanding a filtration aperture and suggest that such an arrangement facilitates cleaning of the filter by backwashing. It would have been obvious to have modified the apparatus of Krapukhin so as to have included the adjustment mechanism as suggested by Kannan in order to facilitate cleaning the filter by backwashing.

Concerning claim 3, Kannan disclose adjustment mechanism that is partially disposed in the inner cavity (e.g., the longitudinally extending shaft 16).

Regarding claim 4, Kannan discloses an adjustment mechanism including a base plate 13, 15 engaging the first end of the filter element.

As to claim 5, Kannan discloses the support as being defined by the base plate 13, 15.

Concerning claim 6, Kannan discloses the base plate as including a base collar 13 and a platform 15 extending from the collar.

As to claim 9, Kannan discloses a flange member 14 engaging the other end of the filter element relative to the base plate 13, the flange member being adjustably engaged (e.g., via parts 16-19) relative to the base plate for modifying the length of the filter element and to reduce or expand the aperture.

Regarding claim 10, Kannan discloses an adjustment shaft 16 extending from the base plate to engage the flange member (e.g., via parts 17-19) for adjusting the flange member relative to the base plate for modifying the length of the filter element and to reduce or expand the aperture.

Concerning claim 11, Kannan discloses the adjustment shaft 16 as extending from the base plate 13, 15, through the inner cavity to engage the flange member 14.

As to claim 12, Kannan discloses the adjustment shaft 16 as being threaded at 16a.

Regarding claim 13, Kannan discloses the adjustment shaft 16 as being attached to the base plate 13, 15 but fails to specify the parts as being integrally molded with each other, however, such a modification is considered obvious in view of *In re Larson*, 144 USPQ 347 (CCPA 1965) or *In re Lockhart*, 90 USPQ 214 (CCPA 1951) which state that making plural parts unitary is obvious.

As to claim 14, Kannan discloses an adjustable lock 18 on the shaft for adjusting the flange member.

Regarding claim 15, Kannan discloses an adjustable lock in the form of a nut 18.

As to claims 34 and 59, Krapukhin fails to specify the details of the canister. Kannan discloses a filter canister 21 including an inlet 23 and an outlet 24, and an analogous filter assembly disposed in the canister. Kannan teaches that the canister provides a means for directing fluid to be filtered through the filter assembly. It would have been obvious to have modified the apparatus of Krapukhin so as to have included

a canister as suggested by Kannan in order to provide a means for directing fluid to be filtered through the filter assembly.

Concerning claim 35, Kannan discloses a shelf 20 for supporting the filter element in the canister.

Regarding claim 36, Kannan discloses an adjustment mechanism 16-19.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Krapukhin in view of Kannan as applied to claim 15 above, and further in view of Heermance.

Krapukhin and Kannan fail to specify the set screw extending through the nut to engage the threaded shaft to lock the nut. Heermance discloses that it is known in the art to provide a set screw C extending through a nut A to engage a threaded shaft B to lock the nut to the shaft. It would have been obvious to have modified the combination suggested by Krapukhin and Kannan so as to have included the set screw as suggested by Heermance in order to provide a means for locking the nut to the threaded shaft thereby maintaining the desired degree of adjustment for the filter.

Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krapukhin in view of Kannan as applied to claims 6 above, and further in view of Lennartz.

With respect to claim 7, Krapukhin and Kannan fail to specify a shoulder arranged between the collar and platform for supporting the filter element. Lennartz



discloses an analogous filter discloses a base plate 18 including a shoulder arranged between a collar and platform (see FIG. 3) and suggests that such an arrangement maintains an end of the filter element in coaxial alignment with the base plate. It would have been obvious to have modified the combination suggested by Krapukhin and Kannan so as to have included a shoulder arranged as suggested by Lennartz in order to maintain an end of the filter element in coaxially alignment with the base plate.

Concerning claim 8, Krapukhin and Kannan fail to specify the platform as being at least partially disposed within the cavity. Lennartz discloses an analogous filter including a base plate 18 having a platform arranged in the cavity of a filter element and suggests that such an arrangement keeps the base plate in engagement with the end of the filter element. It would have been obvious to have modified the combination suggested by Krapukhin and Kannan so as to have included the platform arranged within the cavity as suggested by Lennartz in order to keep the base plate in engagement with an end of the filter element.

Claims 28 and 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krapukhin in view Lennartz.

As to claims 28 and 62, Krapukhin and Kannan fail to specify the coils as including a plurality of ridges. Lennartz discloses a coil having a plurality of ridges 13 (see FIGS. 5-6) and suggests that such ridges maintain a minimum gap between the coils. It would have been obvious to have modified the combination suggested by

Krapukhin and Kannan so as to have included coils having a plurality of ridges as suggested by Lennartz in order to maintain a minimum gap between the coils.

Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Krapukhin in view of Kannan as applied to claim 34 above, and further in view of Fournier.

With respect to claim 42, Krapukhin and Kannan fail to specify the oval shaped inlet. Fournier discloses an oval shaped inlet 14 (see FIG. 1) and suggests that such an arrangement creates a vortex to promote gravitational separation of particles in the fluid. It would have been obvious to have modified the combination suggested by Krapukhin and Kannan so as to have included the oval shaped inlet as suggested by Fournier in order to promote gravitational separation of the particles.

Claims 43-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krapukhin in view of Kannan as applied to claim 34 above, and further in view of Moorehead et al.

With respect to claim 43, Krapukhin and Kannan fail to specify an inlet valve. Moorehead et al disclose an inlet valve 20 and suggests that such a valve enables cleaning of the filter by backwashing. It would have been obvious to have modified the combination suggested by Krapukhin and Kannan so as to have included the inlet valve as suggested by Moorehead et al in order to facilitate cleaning of the filter by backwashing.

As to claim 44, Moorehead et al disclose a controller 51.

Concerning claim 45, Moorehead et al disclose first and second pressure sensors 80, 81 connected to the controller 51.

Regarding claim 46, Moorehead et al disclose an outlet valve 20.

Claims 76 and 77 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krapukhin in view of Kannan and Fournier.

With respect to claim 76, Krapukhin discloses a plurality of wave coils 6 (see FIGS. 1-2 arranged axially to define a filter element having first and second ends and an inner cavity, a support 4 or 5 engaging one of the first and second ends for supporting the wave coils and for delivering fluid inside or outside an inner cavity, each of the wave coils including at least one crest and at least one trough with the crest of one wave coil engaging the trough of an adjacent coil to define a filtration aperture between each crest and trough of adjacent wave coils for filtering fluid diverted by the support (see FIG. 2). Krapukhin fails to specify the details of the canister. Kannan discloses a filter canister 21 including an inlet 23 and an outlet 24, and an analogous filter assembly disposed in the canister. Kannan teaches that the canister provides a means for directing fluid to be filtered through the filter assembly. It would have been obvious to have modified the apparatus of Krapukhin so as to have included a canister as suggested by Kannan in order to provide a means for directing fluid to be filtered through the filter assembly. Krapukhin and Kannan fail to specify the oval shaped inlet. Fournier discloses an oval shaped inlet 14 (see FIG. 1) and suggests that such an arrangement creates a vortex to

promote gravitational separation of particles in the fluid. It would have been obvious to have modified the combination suggested by Krapukhin and Kannan so as to have included the oval shaped inlet as suggested by Fornier in order to promote gravitational separation of the particles.

Concerning claim 77, Kannan discloses an adjustment mechanism 16-19.

Claims 17-24 are allowed.

Applicant's arguments filed on 7-16-03 have been fully considered but they are not persuasive.

Applicant argues that Krapukhin fails to disclose a filtration aperture defined by and between the crests and troughs of one wave coil and an adjacent wave coil, however, it is held that FIG. 2 of Krapukin, which discloses a side view of a species of the helical coil shown in FIG.1, clearly discloses such an arrangement.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

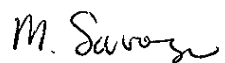
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew O Savage whose telephone number is 703-308-3854. The examiner can normally be reached on Monday-Friday, 7:00am-3:30pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda W. Walker can be reached on 703-308-0457. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

  
Matthew O Savage  
Primary Examiner  
Art Unit 1723

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